

ABSTRACT

During a short duration injection, a triangular geometry is drawn in terms of the injection rate with respect to time, while a trapezoidal geometry is drawn during a long duration injection. The ON timing of the drive pulse is determined to be at a valve opening pressure achieving time before the start point of formation in time of the geometry. An injection pulse duration is determined from "the valve opening pressure achieving time + a needle rise time - a valve closing pressure achieving time," and then the OFF timing of the drive pulse is determined.